**FUNDAMENTALS OF CLINICAL TERMINOLOGY**

**LESSON ONE (10)**

 **I.**  Before we start to speak about one of the subsystems of medical terminology let's recollect some principal points that are necessary to keep in mind. Answer the questions:

 1) What is called "a term"?

 2) What is called "terminology"?

 3) What are the main subsystems of medical terminology?

 4) What notions does the clinical terminology unite?

**II.** **THE STRUCTURAL TYPES OF CLINICAL TERMS**

The basis of the Clinical terminology is the terminology of the Pathological Anatomy, that is of the science, which studies the material and structural basis of any disease, its morphological essence. This complex of terminologies designates all the problems concerning an organism with any pathology.

Clinical terms may designate some symptom, syndrome or disease, method of treatment or investigation, as well as instruments, special devices and so on.

The structural types of the Clinical terms are different. According to their structure Clinical terms may be divided into three groups:

 **1. Simple terms:**

**a) simple root –** wordsof Greek or Latin origin**:**

 e. g.**:  *stupor, oris m -* stupor** – a state of impaired consciousness

 in which the individual shows a marked

 diminution in his reactivity to

 environmental stimuli;

 ***febris*** *-* a fever of some origin;

**b) simple derivatives**. They are words constructed with the help of *suffixes* and *prefixes*. In this case we have an original root word, to which either a prefix or a suffix (sometimes both) is attached,

 e.g.: **trauma, atis n –** *trauma, injury* – the root word with the motivying base - *traumat-;*

 simple derivatives **:**

 **traumaticus, a, um *–*** *traumatic* (adjective, formed from the motivying base – *traumat* - with the help of the suffix –**ic+**us, a, um);

**posttraumaticus, a, um *–*** *posttraumatic* (adjective, formed from the

motivying base –*traumatic*us, a, um with the help of the prefix **post**-).

 A great number of terms are formed by attaching a *prefix* to a greek stem-morpheme: e.g.: ***hypertonia*** (*hyper* - above the norm, -*tonia* - blood pressure) - elevated blood pressure; ***hypotonia*** - (*hypo* - below the norm) - low blood pressure.

 A lot of terms are formed by attaching a *suffix* to the stem-morpheme: e.g.: ***gastritis*** (*gastr* - the stomach, -*itis* - inflammation) - inflammation of the mucous membrane of the stomach; ***lipoma*** (*lip*- fat, adeps; -*oma* - a tumour) - benigne tumour, consisting of adipose tissue.

**2. Compound terms**

They are of the utmost interest in the study of the basics of the medical terminology. *Compound terms consist of two or more morphemes that preserve a certain meaning in the existing terms, as well as in newly constructed.*

 Many of clinical terms end in **–ia,** which is a suffix, designating “process, state or condition”. Its English equivalent is the suffix **–y,** preserving the same as in Latin meaning.

e.g.: Lat. stomatolog**ia –** Engl. stomatolog**y**

 Lat. somotascop**ia** - Engl. somatoscop**y**

 Lat. osteodystroph**ia** – Engl. osteodystroph**y**

 Compound terms, constructed by composition of bases usually include at least two motivying bases and a *combining vowel* ***– o*** between them.

e.g.: ***cardi-o-tomia***

 ***haemat-o-logia***

 ***arthr-o-pathia***

*When we translate a Latin term into English, we transcribe this term from one language into another with the only possible difference in the ending.*

When we explain the meaning of a compound term we start from the *second part* of the term putting the question “what?’ and then go over to the first part of the term putting the question “of what ?” or “where?”

e.g.: Lat. osteologia (*osteo* – bone; -*logia* – science)

 Engl. оsteology - “what?” science “of what?” of bones;

 Lat. ostealgia (*osteo* – bone; -*algia* - pain)

 Engl. ostealgia - “what?” pain “where?” in a bone

 Lat. osteoma (*osteo* – bone; -*oma* - tumor)

 Engl. osteoma - tumor of a bone (a benign growing mass of mature bone)

 Lat. оsteomalacia (*osteo*- bone; -*malacia* – softening)

 Engl. оsteomalacia - gradual softening of the bones

Lat. osteodystrophia (*dys* – difficult; -*trophia* – nourishment)

 Engl. osteodystrophy - difficulty in the nourishment of bone resulting in

 effective formation of bone.

**3. Terms – word combinations.**

In the Clinical terminology a considerable role belongs to word combinations. To construct such terms it is necessary to know grammar rules of the Latin language and especially the rules according to which agreement between nouns and adjectives is achieved.

Recollect grammar material and answer the questions:

1) What is called the nucleus in a term?

2) What is called a non-agreed attribute?

3) Recollect the scheme of constructing a term with non-agreed attribute.

4) What is an agreed attribute expressed through?

5) Recollect the scheme of constructing a term with an agreed attribute.

The role of attributes is to detalize the information or to show the localization of the pathological process.

e.g.: ***pneumonia apicalis*** – pneumonia (inflammation of the lung parenchyma), localized in the upper part of the lungs (the apex).

 ***abscessus appendicis*** – appendiceal abscess (collection of pus in the appendix).

 ***ulcus gastris*** – ulcer (lesion on the mucous membrane) of the stomach.

Some international word combinations are included by tradition into the texts, written in national languages, in Latin transcription.

habitus aegroti -

status praesens -

prognosis pessima (optima) -

exitus letalis -

foetor ex ore –

**MEMORIZE CLINICAL TERMS:**

|  |  |  |
| --- | --- | --- |
| ***abscessus, us, m***  | *abscess*  | collection of pus |
| ***cancer, cri, m*** | *cancer* | any malignant neoplasm: malignant – deadly/fatal; neo- -new; -plasm – formed tissue |
| ***colica, ae f*** | *colic* | spasmodic pains in the stomach or abdomen |
| ***coma, atis n***  | *coma* | a state of profound unconsciousness |
| ***comatosus, a, um*** | *comatose* | in a state of coma |
| ***cysta, ae f***  | *cyst* | 1) any bladder; 2) sac, containing gas, fluid, etc |
| ***diabetes, ae f*** | *diabetes* | disease having the symptom polyuria |
| ***diabeticus, a, um*** | *diabetic* | relating to diabetes |
| ***fractura, ae f*** | *fracture* | a break, esp. the breaking of a bone |
| ***gangraena,ae f***  | *gangrene* | mortification; necrosis due to obstruction, loss, or diminution of blood supply |
| ***gangraenosus, a, um***  | *gangrenous* | mortified; related to or affected with gangrene |
| ***hernia, ae f*** | *hernia* | rupture; protrusion of a part or structure through the tissue normally containing it |
| ***icterus, i, m*** | *jaundice* | yellow colouring of the tissues |
| ***ileus, i m*** | *ileus* | obstruction of the bowel |
| ***infectio, onis f***  | *infection* | penetration of infectious agents into the body |
| ***infectiosus, a um*** | *infectious* | relating to infection |
| ***oedema, atis, n*** | *edema* | swelling; an accumulation of an excessive amount of watery fluid in cells, tissues or serous cavities |
| ***paralysis, is, f*** | *paralysis* | loss of power of voluntary movement in a muscle through injury to or disease of its nerve supply; stop of function |
| ***paralyticus, a, um***  | *paralytic*  | relating to paralysis |
| ***paresis, is f***  | *paresis* | partial or incomplete paralysis  |
| ***ulcus, eris n***  | *ulcer* | a lesion on the surface of the skin or a mucous surface, caused by superficial loss of tissue, usually with inflammation |
| ***ulcerosus, a um*** | *ulcerous* | relating to, affected with or containing an ulcer |
| ***acutus, a, um*** | *acute*  | sharp and sudden |
| ***benignus, a, um*** | *benign* | not harmful for life |
| ***malignus, a, um*** | *malignant* | deadly or harmful for life |
| ***juvenilis, e***  | *juvenile* | that of young age |
| ***infantilis, e***  | *infantile* | that of a child |
| ***senilis, e*** | *senile* | that of an old age |

 **EXERCISES**

1. Translate the terms - medical diagnoses into English and explain their meanings:

1. gangraena diabetica
2. colica hepatica
3. hernia cerebralis occipitalis
4. ulcus gastris

5. inflammatio acuta

6. coma diabeticum

7. paralysis cerebralis juvenilis

8. oedema cerebri toxicum

2. Translate the terms - medical diagnoses into Latin and explain their meanings:

1. abdominal hernia
2. cancer of the lung
3. chronic inflammation
4. acute abscess
5. paralysis of the heart

6. fracture of the clavicle

7. chronic ulcer

8. palatal abscess

**LESSON TWO (XI)**

**SIMPLE DERIVATIVES: SUFFIXATION**

Suffixation is the attachment of a suffix to a motivying base. Suffixes have a very important classifying function. Thanks to them words are attributed to certain classes of notions; for example, all the nouns with the suffixes **–*ul (-cul), -ol* −** belong to the class of diminutives, that is, they have a diminishing meaning:

e.g.: tuber − tuber (swelling, protuberance)

 tuber**cul**um − tubercle (small tuber)

The suffix ***–io*** has the meaning of the “process or result of an action” and corresponds to the English ***–tion****,* e. g:

Lat. rotatio – Engl. “rotation” (the process of turning round)

**MEMORIZE THE SUFFIXES:**

|  |  |  |
| --- | --- | --- |
|  Suffixes |  Meaning |  Example |
| - cul, -ul, -ol, -ell | diminutive | tuberculum (small tuber) |
| -ur- | result of some action | mixtura – (mixture) |
| -ol-, -in- | pharmaceutical substance or medicine | IchthyolumLanolinum  |
| -osis | non-inflammatory disease; larger quantity of ... | neurosis – (non-inflammatory disease of the nervous system) |
| -iasis | name of disease, non-inflammatory in nature | helminthiasis –(helminth invasion) |
| -itis | inflammatory disease | bronchitis - (inflammation of bronchs) |
| -oma | tumour | adenoma – (tumour of a gland) |
| -ismus | 1. phenomenon, quality, fact 2. deviation from some norm 3. addiction to some substance; dependence4. poisoning (chronic) | albinismusinfantilismus – slow development of mind and bodyalkoholismus – addiction to alkoholiodismus – chronic poisoning with iodine |
| -genus (a, um)  | a) causing some diseaseb) caused by damage in an organ;  | cancerogenus –(causing cancer)cardiogenus |

**EXERCISES**

1. Construct the names of inflammatory diseases. Explain their localization:

gastr…(stomach), nephr…(kidney), cholecyst… (gallbladder), cyst…(urinary bladder), tonsill…, pancreat…, gingiv…, vascul…, hepat…, appendic-

2. Form the terms with the meaning of “benign neoplasm”. Explain their meanings:

hepar, atis n; lympha, ae f; myo- (muscle); chondro- (cartilage); osteo- (bone); nephro- (kidney); lipo- (fat), dermat- (skin).

**SIMPLE DERIVATIVES. PREFIXATION.**

Alongside with suffixation, another productive way of word-building is prefixation, that is the attachment of a prefix to a motivying base without changing the meaning but giving some additional information on localization (above, below, in, out, of, etc.), direction (to, from, etc.), absence or negation of something, etc. There are synonyms and antonyms among the prefixes which is due to the existence of Greek and Latin prefixes with the same or opposite meanings. The English medical terminology makes use of Greek and Latin prefixes, preserving the meanings attached to them in Latin.

e.g.: **ad**– (approach); **ab**– (removal) – antonyms

 musculus adductor - adductor muscle

 musculus abductor - abductor muscle

**epi**– (above); **supra**– (above) – synonyms

suprascapularis – suprascapular – above the scapula

epitympanicus – epitympanic – above or in the upper part of the tympanic

 membrane

 **MEMORIZE THE PREFIXES**

|  |  |  |
| --- | --- | --- |
|  Prefixes |  Meaning |  Examples |
| a-, an-ant(i)- | absence, withoutagainst, contrary to | ***a****tonia* – absence of the tonusantidotum - remedy contra poison  |
| contra- | contrary to, against | Contrahelminum - remedy for worms (helmints) |
| de-, des- | a) elimination; b) getting worse in quality | degeneration - worsening of genusdesinfectio – elimination of infection |
| dys- | dysorder of some function | dystrophia – dysorder of blood supply |
| ecto-, exo- | outside  | ectoderma – (gr. derma - skin) - outer layer of skin |
| endo- | inside | endoscopia – method of examination of inner surface of some organ with the help of special device |
| ex- | out of | extractum – extract |
| epi-  | above, upper | epicardium - the outer layer (stratum) of the heart muscle |
| hyper- | excessive, above the norm | hypertonia – high blood pressure |
| hypo- | below the norm | hypotonia – low blood pressure |
| in- | into | injectio – injection |
| inter- | between | intercostalis – between the ribs |
| intra- | endo, inside | intravenosus - intravenous, inside the vein |
| per- | through | percutaneus (lat. cutis - skin) - through the skin |
| post- | after | postoperativus - after an operation |
| prae- | before, prior to | praeoperativus - before an operation |
| re- | return of, repetition | reinfectio – return of infection |
| sub | before | subclavicularis - below the clavicle |
| sym-, syn- | connection, joining together | synchondrosis - connection with the help of cartilage (gr. chondr - cartilage) |

**EXERCISES**

I. Explain the meaning of prefixes in the following words:

hypotonia, hypertonia, anaemia, dystonia, dysbacteriosis, endocardium, atonia, dystrophia, extractum, praecordium, atrophia, reanimatio, desinsectio, interosseus, intramuscularis, antidotum

II. Answer the questions:

 1. What prefixes have the meaning a) direction through; b) between?

 2. What prefixes are used to denote a) disturbance, difficulty of a function?

b) excessive function c) absence of a function?

3. What prefixes correspond to the English ***against*?**

 4. What stratum of the heart muscle is external?

 a) endocardium b) epicardium c) myocardium

5. Which of the strata of the skin is inner, profound? Why?

 a) entoderma b) mesoderma c) ectoderma

6. What prefix has the meaning contrary to the meaning of the prefix **prae-**? Give examples in Latin and in English.

 7. What terms will have the meaning of “ rapid breathing, stop of breathing, weakening of breathing, difficulty of breathing, if “ breathing” is designated through the Combining form ***“-pnoё*”** ?

 8. Combining form “-tonia” denotes “the tone”. What terms will you construct to express: a) absence of tone? b) difficulty, trouble in a tone? c) excessive tone? d) lowered tone?

III. Fill in the blanks:

1. In the meaning of *“after something”* the Latin prefix … is used, and in the meaning of *“behind”* the prefix … is used.

2. The upper part of the abdomen is called *epigastrium*, the lower part is called …

3. In the terms *“intrabdominalis”, “intramuscularis", "intravenosus*” the prefix **«***intra-»* denotes ….

IV. Write prefixes with the meanings opposite to:

in-; extra-; prae-; epi-; hyper-

V. Explain the meanings of the prefixes in the following terms:

 1***. sub-, hypo-; super-, supra-, epi-***

Subscapularis, supraspinalis, supratrochlearis, submandibularis, suprasternalis, subnormalis, epigastricus, suprarenalis, subfemoralis, subcutaneous

 2. ***in-, ex-, intra-;***

 ***inter-, endo-***

intermuscularis, intracellularis, endocervicalis, intracranialis, interalveolaris, interosseus, inhalatio, injectio, interatrialis, inspiratio, expiratio

 3. ***prae-, pro-;***

 ***post-, retro-, re-;***

praevertebralis, retrobuccalis, postnatalis, praenatalis, reactio, retroarticularis, reinfectio, praecordialis, retroduodenalis, revaccinatio, praecancerosus, retroperitonealis, retropositio

 4. ***contra-, anti-;***

 antibiotica, antidepressiva, contraindicatio, contrapertura, antisepticus, anthelminthicus

# VI. Finish the construction of the terms:

1. An increase in number of cells in a tissue or organ:

***… plasia***

2. Reduced thyroid function:

***… thyreosis***

3. Impaired gastric function:

***… pepsia***

4. Total inability to recall past experiences:

***… mnesia***

5. abnormal breathing (impaired function):

***… pnoё***

VII Accomplish constructing the terms by using a prefix:

|  |  |
| --- | --- |
| …aesthesia (sensitivity)  | 1. excessive sensitivity2. insufficient sensitivity 3. irregular (impaired) sensitivity 4. absence of sensitivity  |
| …uria(urination)  | 1. disordered urination 2. absence of urination 3. insufficient daily urination (olig…)4. excessive daily urination (poly…) |
| …trophia (feeding, blood supply)  | 1. insufficient feeding (blood supply) 2. absence of feeding (bood supply) 3. excessive feeding (blood supply) 4. disorder in blood supply  |
| …tonia(blood pressure; tension of vessel)  | 1. low blood pressure 2. high blood pressure 3. irregular blood pressure 4. absence of tension of vessels  |

VIII. Read and try to memorize the names of numerals, given in the table below. Study the examples.

**LATIN AND GREEK NUMERALS USED AS PREFIXES**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Latin | Greek | English | Russian | Examples |
| semi-uni-, un-duo-, bi-ter-, tri-quadri-quinque-sex-septem-, septi-octo-novem-, nona-decem- | hemi-mono-di-tri-tetra-penta-hexa-hepta-octo-ena-deca- | half-  one- two- three-  four-  five-six- seven- eight- nine- ten-  | полу-одно-двух-трех-четырех-пяти-шести-семи-восьми-девяти-десяти- | semilunaris - having the form of half-moonunicellularis - "one-cell organism"bipartitus - having two partstrifolium - "having three leaves"quadratus - "having four sides"quinquelobatus - "having five lobes" hexachloratus - "having six atoms of chlorine"September October, November, December(the names of the 7-th, 8-th, 9-th and 10-thmonths (in Julian's Calendar) |

**LESSON THREE (XII)**

**COMPOUND TERMS. COMBINING FORMS OF THE GREEK ORIGIN DENOTING ORGANS**

As you know from Anatomy, any organ or tissue is designated through a Latin term. Thus, the majority of names of organs in Human Anatomy are of Latin origin, but some of them come from Greek. Almost every Latin term of the Human Anatomy has its Greek *duplicate* in the Pathological Anatomy*. Greek designations* *of organs and tissues occur as* ***Combining forms*** and are usually not used as independent words, but we single them out in the structure of compound terms.

As it has already been mentioned in Lesson One, the name of an organ is included into the term *as its first part* as a rule; the science, method, diagnostics and disease being included into its second part.

e. g.: ***spondylitis*** – inflammation of the vertebrae;

 ***arthropathia*** – any disease affecting a joint;

 ***cardiograph*** – an instrument for recording graphically the movements

 of the heart

So, a greek name of organ, tissue, substance or colouring should be placed in the first position in a compound term, they are considered to be initial elements (combining forms).

But there are cases when the names of organs occur as final combining forms, denoting 1) congenital pathologies or 2) some part of a structure, usually in the terms constructed with the help of prefixes:

e. g.: 1) ***apodia*** – congenital absence of feet;

 **macropodia –** abnormally large feet;

 but: ***podalgia*** – pain in the foot.

 2) ***pericardium –*** fibro-serous membrane covering the heart

 ***endocardium –*** the innermost tunic of the heart,

 but: ***cardiopathia*** – any disease of the heart

NB! Greek Combining Forms are not translated, but transcribed into English!

**MEMORIZE GREEK AND LATIN DUPLICATES**

**OF NAMES OF ORGANS:**

**(initial combining forms)**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Greek*** | ***Latin*** | ***English*** | ***Example***  |
| adeno- | gandula, ae, f | gland |  |
| angio- | vas, vasis, n | vessel |  |
| arthro- | articulatio, onis, f | joint |  |
| cardio- | cor, cordis, n | heart |  |
| cephal-, kephal | caput, itis, n | head |  |
| cholecyst- | vesica fellea | gallbladder |  |
| cyst- | vesica urinaria | urinary bladder |  |
| dermat- | cutis, is, f | skin |  |
| encephal- | cerebrum, i, n | brain |  |
| entero- | intestinum, i, n | intestine |  |
| gastr- | venter, tris, m | stomach |  |
| gloss- | lingua, ae, f | tongue |  |
| hepat- | hepar, atis, n | liver |  |
| laparo- | abdomen, inis, n | abdomen |  |
| myo- | musculus, i, m | muscle |  |
| nephr- | ren, renis, m | kidney |  |
| neur- | nervus, i, m | nerve |  |
| osteo- | os, ossis, n | bone |  |
| ophthalm- | oculus, i, m | eye |  |
| oto- | auris, is, m | ear |  |
| phlebo- | vena, ae, f | vein |  |
| pneumo- | pulmo, onis, m | lung |  |
| rhino-  | nasus, i, m | nose |  |
| stomato- | os, oris, n | mouth |  |

**COMBINING FORMS DENOTING SCIENCE, METHODS**

**OF DIAGNOSTICS, TREATMENT, DISEASE**

**(final combining forms)**

|  |  |  |
| --- | --- | --- |
| ***Greek*** |  ***English meaning*** | ***Example*** |
| -aesthesia | sensitivity, esthesia | an*aesthesia* |
| -algia | pain, painful condition | cephal*algia* |
| -ectomia | surgical removal of some anatomical structure | append*ectomia* |
| -graphia,-gramma | writing, description, registration of the work of some organ(often x-ray)graphic result of some investigation (x-ray exam) | cardio*graphia*cardio*gramma* |
| -iatria | treatment of some group of diseases | ped*iatria,* psych*iatria* |
| -logia | science, field of science, studying some subject | biologia, cardiologia |
| -pathia | disease of ..., suffering | cardiopathia |
| -scopia | instrumental investigation, viewing of some organ with the help of special instrument (often from inside) | rentgenoscopiagastroscopia |
| -therapia | a method of treatment (non-surgical) with the help of ... | hormono*therapia* |
| -tomia | incision, cutting operation | laparo*tomia* |
| -tonia | blood pressure; tension of some tissue | hyper*tonia* |

 **EXERCISES**

1.Construct the terms, denoting inflammatory diseases of some organs and tissues:

brain, mouth, stomach, kidney, liver, spleen, pancreas, skin, joint, intestines, urinary bladder, gallbladder

2.Form Latin terms denoting field of medical science:

"studying diseases of mouth cavity",

"studying diseases of the heart,

"studying diseases of the kidneys",

"studying diseases of the skin",

"studying diseases of the blood system",

"part of anatomy describing the system of glands",

"part of anatomy describing the system of muscles",

"part of anatomy studying the system of blood vessels"

3. Form Latin terms denoting instrumental investigation of some organ:

mouth, stomach, urinary bladder, small intestine, organs of the abdominal cavity

4. Form Latin terms denoting "graphic result of some investigation", explain their meaning:

brain, heart , blood analyse, x-ray study of blood vessels, х-ray study of veins

5.Form Latin terms denoting pain in some organ:

heart, kidneys, joint, urinary bladder, mouth, stomach, nerve (along the nerve), ear

6.Form Latin terms, denoting "some disease of... ":

brain, heart, kidneys, pancreas, joints, spleen, glands, vessels

7. Analyze the terms: split them into Combining forms, give the meaning of each, explain the common meanings of the terms:

encephalogramma, stomatalgia, angiopathia, cardiologia, gastroscopia, nephropathia, splenitis, arthralgia, angiologia, enteritis, cystalgia, encephalopathia, stomatitis, cardiogramma, gastralgia, nephritis, hepatoma, arthropathia, gastroenterologia, cystoscopia angiologia

**ADDITIONAL EXERCISES**

1. Analyze the terms: split them into Combining forms, give the meaning of each, explain the common meanings of the terms:

оsteologia, stomatologia, arthropathia, rhinologia, hormonotherapia, cardiographia, osteogenus, hepatogenus, angiopathia, odontalgia, osteoarthropathia, ophthalmoscopia, cardiogramma, encephalogramma, cephalgia, anaesthesia, dysaesthesia, hypaesthesia, angiitis, glossalgia

2. Form the latin terms denoting surgical removal of some organ or part of it:

stomach, lung, intestine, gallbladder, gland, kidney, vein

3. Form the latin terms denoting surgical incision, cutting operation of some organ or tissue:

muscle, nerve, abdominal cavity, stomach, bone, vein, blood vessel

4. Construct the terms according to their definitions:

1. Any disease of the heart
2. Inflammation of the urinary bladder
3. Pain in the ear
4. Headache

5. Therapy by using heat (thermo-)

6. The science concerned with the study of the diseases of eyes

7. A disorder affecting bones and joints

8. Carcinoma (malignant tumour) in a bone

9. Pain in the region of the heart

10. The study of the diseases of the mouth

11. Inflammation of the mucous membrane of the mouth

12. Disease of the nose

13. Inflammation of the ear

14. Inflammation of the kidney

15. The examination of the eyes (to determine the presence of vision

 problems and eye disorders)

16. Pain in the stomach

17. An inflammatory disorder of the skin

 **SELF-CONTROL EXERCISES**

 **Variant I**

I. Write Combining forms to the following names of organs :

 1. caput, itis *n* - 5. oculus, i *m* -

 2. os, oris *n* - 6. cor, cordis *n* -

 3. nasus, i *m* - 7. articulatio, onis *f* -

 4. auris, is *f*- 8. dens, dentis *m* -

II. Match the following medical terms with their definitions:

1. *any disease of nervous system*

neuritis

neurosis

neuropathia

2. *the science concerned with the study of the muscles*

myositis

myologia

myalgia

3. *caused by damage of the function of the liver*

hepatogenus

hepatitis

hepatomegalia

4. *the medical science concerned with the study of the venous system*

phlebologia

phlebopathia

phlebographia

 5. *low sensitivity*

hyperaesthesia

anaesthesia

hypaesthesia

  **Variant II**

I. Write Combining forms to the following names of organs**:**

 1. articulatio, onis *f* - 5. lingua, ae *f* -

 2. os, ossis *n* - 6. nasus, i *m* -

 3. cor, cordis *n* - 7. vena, ae *f* -

 4. oculus, i *m* - 8. auris, is *f* -

II. Match the following medical terms with their definitions:

1*. any disease of joints*

 arthrosis

 arthritis

 arthropathia

2***.*** *the study of the structures, functions and diseases of the mouth*

somatologia

 stomatologia

stomatomycosis

3. *the medical science that concerns with the diseases of the skin*

phlebologia

neurologia

dermatologia

4. *writing down the data of the work of* the heart

 cardiogramma

cardiographia

cardiometria

5. *method of treatment with the help of water*

hydrophobia

hydrotherapia

hydraemia

Check up yourself:

The answers for the tasks

Variant I

I.1. kephalo-; cephalo- 5. ophthalmo-;

 2. stomato-; 6. cardio-

 3. rhino- 7. arthro-

 4. oto- 8. odont-

 II. 1. neuropathia

 2. myologia

 3. hepatogenus

 4. phlebologia

 5. hypaesthesia

Variant II

I. 1. arthr- 5. gloss-

 2. osteo- 6. rhino-

 3. cardio- 7. phlebo-

 4. ophthalm 8. oto-

II. 1. arthropathia

 2. stomatologia

 3. dermatologia

 4. cardiographia

 5. hydrotherapia

**LESSON FOUR (XIII)**

**THEME: COMPOUND TERMS. COMBINING FORMS OF THE GREEK ORIGIN.**

Answer the questions:

1. What is called "a combining form"?

2. What structure may a clinical term have?

3. What is the structure of a derivative term?

4. What is the structure of a compound term?

5. What meaning do usually have combining forms used *as the first part* of a term?

6. What meaning do usually have combining forms used *as the final part* of a compound term?

7. How should we translate a derivative term?

8. How should we translate a compound term?

 **EXERCISES**

1. Analyse the structure of the following terms, give their meanings:

|  |  |
| --- | --- |
| adenologiaangiopathiaarthralgiacardiogrammaenteritisgastroscopiahepatosiscystoscopiadermatitisencephalogramma | ophthalmologiaphlebogrammarhinoscopiacephalalgia cholecystotomiaosteopathiaotoscopia laparotomia pneumectomianephroma  |

2. Construct the terms with the given meaning:

a) surgical removing of : stomach b) surgical incision of: a vessel

 kidney muscle

 a gland urinary bladder

 gallbladder intestines

 vein abdomen

 lung (partial) nerve

**MEMORIZE GREEK AND LATIN DUPLICATES OF**

**NAMES OF TISSUES, SUBSTANCES:**

**(initial combining forms)**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Greek*** | ***Latin*** | ***English*** | ***Example*** |
| chondro- | cartilago, ginis, f | cartilage |  |
| cyto- | cellula, ae, f | cell |  |
| glycko- |  -  | sweet, sugar,glucose |  |
| haemat- | sanguis, inis, m | blood |  |
| hydr- | aqua, ae, f | water |  |
| lymph- | lympha, ae, f | lymph |  |
| myo- | musculus, i, m | muscle |  |
| uro- (-uria) | urina, ae, f  | urine |  |

**COMBINING FORMS DENOTING SOME PATHOLOGICAL CONDITION, STATE OR PROCESS**

**(final combining forms)**

|  |  |  |
| --- | --- | --- |
| ***Greek*** | ***English meaning*** | ***Example*** |
| -aemia | (blood) state of blood |  |
| -ectasia | dilation, expansion = ectasis |  |
| -malacia | softening of some tissue, organ=malacia |  |
| -megalia | enlargement of an organ = megaly |  |
| -necrosis | dying away = necrosis |  |
| -penia | deficiency (of blood cells) = penia |  |
| -philia | craving for, liking |  |
| -phobia | unfounded morbid dread or fear=phobia |  |
| -ptosis | downward displacement of an organ = ptosis |  |
| -rhagia | blood discharge, bleeding = rhagia |  |
| -sclerosis | hardness, induration = sclerosis |  |
| -stenosis | narrowness, constriction = stenosis |  |

**EXERCISES**

I.Construct the terms, denoting part of medical science, that studies the following: "cell", "blood", "muscles", "urinary system"

2. Analyze the structure of the following terms, explain their meanings:

a) hyper-glyk-aemia, hypo-glyk-aemia, ur-aemia, hydr-aemia;

b) chondr-oma, oste-oma, lymph-oma, my-oma;

c) chondro-malacia, osteo-malacia, encephalo-malacia, adeno-malacia

3. Analyze the terms: split them into Combining forms, give the meaning of each, explain the common meanings of the terms

a) anaemia, haemotherapia, haemangioma, haematologia, haemarthrosis, haematonephrosis, haematuria, uraemia, azotaemia, cholaemia, haemopathia, haemopathologia, haematogramma

***\*haemo-; haemato*- + name of organ = *blood in this organ,***

*e.g. haemothorax - blood in the thoracic case*

b) neurosis, neuritis, neuroma, neurospasmus, neurologia, neuralgia, neurectomia, neurogenus

c) myositis, myoma, myocardium, myocardiosclerosis, myographia, myopathia, myotonia

4. Construct the terms with the meaning:

a) dilation of - the heart

 - the stomach

 - the vessels

 - the veins

 - the bronchs

 - urinary bladder

b) enlargement of - the brain

 - the liver

 - the heart

 - the tongue

c) discharge of blood from - the veins

 - the mouth

 - the intestines

 - the nose

 - the ear

 - in the stomach

 - in the eye

d) morbid fear of - water

 - blood

 - heart (attack)

5. Construct Latin compound terms with the following meanings:

1. Hemorrhage into the substance of the kidney.
2. Presence of blood in the urine
3. Softening of the walls of the stomach.
4. Inflammation of the spleen.
5. Removal of the spleen.
6. X-ray examination of the gallbladder.
7. A neoplasm of hepatic origin (tumour of the liver)
8. Pain in cartilage.
9. Softening of any cartilage.
10. Narrowing of the lumen of the vein from any cause.
11. Any disease of the kidneys.

12. Pain in the mouth.

**LESSON FIVE (XIV)**

**THEME: WORD-BUILDING IN CLINICAL TERMINOLOGY.**

**COMBINING FORMS DENOTING SOME METHODS OF TREATMENT, SURGICAL PROCEDURES**

**(final combining forms)**

|  |  |  |
| --- | --- | --- |
| ***Greek*** | ***English meaning*** | ***Example*** |
| -ectomia | removal of an organ or part of it = ectomy |  |
| -pexia | fixation (surgical) of an organ = pexia |  |
| -plastica | plastic surgery; restauraion of shape, function = plasty |  |
| -stomia | creation of artificial opening, anastomosis |  |
| -rhaphia | surgical suturing = rhaphy |  |
| -tomia | incision, cutting operation = tomy |  |

**COMBINING FORMS DENOTING SOME OTHER NOTIONS**

**(initial combining forms)**

|  |  |  |
| --- | --- | --- |
| ***Greek*** | ***English meaning*** | ***Example*** |
| auto- | self, same |  |
| brady- | slow |  |
| erythr- | red |  |
| hetero- | other, different from |  |
| leuko- | white |  |
| macro- | large, enlarged |  |
| micro- | small, less in size |  |
| melan- | black, dark |  |
| poly- | multiple  |  |
| tachy- | quick, rapid |  |

**EXERCISES**

1. Explain the meanings of the following terms:

a) gastrectomia, gastropexia, gastrotomia, gastrorhaphia, gastrostomia

b) splenotomia, splenopexia, splenectomia, splenorhaphia

c) nephrostomia, nephrorhapia, nephrotomia, nephrectomia, nephropexia

d) pneumotomia, pneumectomia, pneumopexia, pneumorhaphia

2. Analyze the terms, explain the meaning:

auto-haemo-theraia; brady-cardia; erythro-cytus; leuko-cytus; macro-cytus; mico-elementum; melan-inum; poly-dactylia; tachy-cardia; auto-plastica; brady-pnoe; tachy-pnoe; macro-cephalia; leuko-dermia; melano-dermia; melan-uria; hetero-plastica

**REVISION EXERCISES**

1. Explain the meanings of the following terms:

a) odontorrhagia, hydraemia, lymphocytopenia, leucodermia, chondromalacia, hydrophobia, apnoё, hypopnoё, atrophia, dystrophia, hypertrophia, hypotrophia, hypertonia, dystonia, atonia

b) aërotherapia, hydrocephalus, haemopoësis, xerodermia, cardioplegia, ophthalmoplegia, tachycardia, tachypnoё, polyangiitis, polyarthritis, polyneuritis, tonometria, ophthalmitis, endocarditis, pharmacotherapia, psychotherapia

2. Construct Latin terms with the following meanings:

1. Inflammation of the skin;
2. The discharge of blood from a tooth;
3. Hemorrhage from the stomach;
4. Presence of blood in a joint;
5. The presence of an increased amount of blood in a part or organ (hyper...) ;

7. Paralysis of an eye;

8. The branch of medicine concerned with the medical problems of children;

9. Excision of the breast;

10. Shortness of breath, a subjective difficulty or disorder in breathing;

11. An abnormally small concentration of glucose in the circulating blood;

12. Larger amount of fluid (water) in the blood;

13. Deficiency in the number of red blood cells;

14. High blood pressure;

15. Abnormal smallness of the spleen;

16. Excessive excretion of urine;

17. Enlargement of the liver;

18. Inflammation of the joints.

**SELF-CONTROL EXERCISES**

# 1. Write initial Combining Forms, corresponding to the names of organs and tissues:

1. tumor 4. cartilage
2. skin 5. glucose
3. water 6. muscle

II. Give English equivalents of the following Combining Forms:

1. -megalia 5. melan-
2. -tonia 6. poly-
3. -stomia 7. macro-

4. -pathia 8. micro-

III. Use the Cf *production -* ***poesis*** to build medical terms meaning:

1.production of blood

2.production of urine

3.production of red cells

4.production of white cells

5.production of lymphocytes

IV. Use the Cf  *formation* *or development* **plasia** to build medical terms meaning:

1.forming bone tissue

2.formation of tissue (of the embryo)

3.production of tumors

4.the development of the cartilage

5.formation of the heart in the embryo

V. Use the Cf *deficiency* **penia** to build medical terms meaning:

1.decrease in RBCs (red blood cells)

 2.derease in WBCs (white blood cells)

 3.decrease in lymphocytes

 4.decrease in thrombocytes

VI. Use the Cf *discharge of blood* **rhagia** to build medical terms meaning:

 1.bleeding from the stomach

 2.hemorrhage from the tooth

 3.bleeding from the ear

 4.bleeding in the kidney

VII. Use the Cf *nourishment* **trophia**to build medical terms meaning:

 1.excessive nourishment

 2.absence of nourishment

 3.deficient nourishment

 4.bad nourishment

VIII. Use the Cf *breathing* **pnoe** to build medical terms meaning:

1. difficult or painful breathing
2. slow breathing

 3. rapid breathing

 4. absence of breathing

IX. Use the C f *paralysis* **plegia** to build medical terms meaning:

1. paralysis of the heart
2. paralysis of an eye
3. paralysis of kidneys

4. paralysis of urinary bladder

 **Check up yourself:**

 **Answers to the tasks**

**I.** 1. onco- 4. chondr**- II.** 1. -enlarged 5. black, dark

 2. dermato- 5. glyco- 2. tonus, blood pressure 6. a lot of

 3. hydr- 6. myo- 3. creation of anastomosis 7. large

 4. suffering, disease 8. small

**III**. 1. haemopoesis **IV**. 1. osteoplasia **V.** 1. erythropenia

 2. uropoesis 2. histoplasia 2. leukopenia

 3. erythropoesis 3. oncoplasia 3. lymphocytopenia

 4. leukopoesis 4. chondroplasia 4. thrombocytopenia

 5. lymphocytopoesis 5. nephrorhagia

**VI**. 1. gastrorhagia **VII** 1. hypertrophia **VII**I. 1. dyspnoe

 2. odontorhagia 2. atrophia 2. bradypnoe

 3. otorhagia 3. hypotrophia 3. tachypnoe

 4. nephrorhagia 4. dystrophia 4. apnoe

**IX**. 1. cardioplegia

 2. ophthalmoplegia

 3. nephroplegia

 4. cystoplegia

# LESSON SIX (XV)

**REVISION OF LESSONS I – V**

The aim of this Revision Lesson is to systematize the studied material and to prepare for the final control in the Clinical Terminology.

Keys to exercises will help you to check up your knowledge, skills and habits of working with clinical terms.

**EXERCISES**

I. Choose a correct answer:

1. *Abnormal nutrition (blood supply) of a part or organ:*

a) dystonia, b) dysaesthesia, c) dystopia d) dystrophia

1. *Lowered blood pressure:*

a) dystonia b) hypertonia c) atonia d) hypotonia

3. *Discharge of blood:*

a) haemorrhagia b) haemotherapia c) haemopoesis d) haematophobia

4. *Inflammation* (of the mucous tunic) *of the nose*

a) rhinorrhoea b) rhinitis c) rhinopathia d) rhinorrhagia

II. Construct medical terms with the meaning "pain in some organ", give English equivalents:

arthr-

cephal-

ot-

my-

nephr-

cyst-

neur-

cardi-

gastr-

 gloss-

III. Construct medical terms with the meaning "instrumental observation of some organ", give English equivalents:

cyst-

ot-

broncho-

gastr-

gloss-

stomato-

IV. Construct the terms with the meaning:

a) inflammation of: kidneys

 skin

 liver

 joints

 muscle

 cartilage

stomach

 intestines

 gallbladder

 urinary bladder

 brain

 ear

b) tumour of: a gland muscle

 liver kidney

 skin lymphatic gland

V. Analyse the structure of the terms and explain their meanings:

1) adenectomia, cholecystectasia, chondromalacia, cytologia, nephroptosis, ophthalmoplegia, osteoma, phlebostenosis, rhinorhagia, haemotherapia, cardioplegia, cardiophobia, osteomalacia

2) biologia, bradycardia, phlebitis, pediatria, myologia, tachycardia, dermatitis, dystonia, gastroptosis, rhinitis, hormonotherapia, melanodermia, stomatorrhagia, enterostomia, ophthalmoplegia

3) arthritis, osteochondrosis, cholecystopathia, cystoma, cystitis, chondritis, osteoma, arthrosis, gastralgia, adenitis, antibioticotherapia, paediatria, dermatologia, dermatitis, laryngostenosis, gastroectasia, phlebectasia

4) bronchectasia, phleborhagia, angiologia, angioma, cholecystitis, anaemia, hypoglykaemia, leukaemia, lucocytus, leucodermia, erythrocytus, haemotherapia, hydraemia, hydrotherapia,thrombopenia, leucopenia

VI. Accomplish constructing the terms with the given meaning:

1. treatment with oxygen oxygeno…
2. part of medicine that deals with diseases of heart cardio…
3. insufficiency in blood supply (feeding) hypo…
4. treatment with blood transfusion haemo…
5. lowered number of white blood cells leuco…
6. high level of glucose in blood hyperglyk…
7. pain along the nerve neur…
8. disorder in feeding (blood supply) dys…
9. insufficiency of breath hypo...
10. science studying blood haemato…
11. absence of tone (muscles, intestines) a...
12. "absence of blood" (little haemoglobine) an…

VII. Accomplish constructing the terms with the given meaning:

*.*

1. presence of blood in the thorax haemo…
2. rapid heartbeats tachy…
3. hardening of heart muscle myocardio...
4. urination with blood haemat…
5. irregular tone (of blood vesels) dys...
6. insufficiency of thrombocytes thrombo…
7. absence of sensitivity an…
8. excessive sensitivity hyper…
9. pain in the region of the heart cardi...
10. low level of glucose ib blood hypoglyk...
11. any disease of the brain encephalo…
12. slow heartbeats brady...

VIII. Accomplish constructing the terms with the given meaning:

1. downward displacement of a kidney - .. .ptosis

2. some disease of the heart -.. .pathia

3. surg. removing of the stomach - ...ectomia

4. pain in the mouth - ...algia

5. surgical incision of a nerve - .. .tomia

6. toothache - . ..algia

7. plastic operation of the nose - .. .plastica

8. stretching of the bronchi - ...ectasia

9. downward displacement of the spleen -.. .ptosis

10.pain in the stomach - .. .algia

11.surgical suturing of a lung - ...rhaphia

12. some disease of the brain - ...pathia

IX. Construct compound terms with the following meanings:

1. The formation (production) of blood
2. A tumor consisting of muscular fibers
3. Inspection of the interior of the intestines through an endoscope.
4. Suture of the tear or incision in the lung
5. Pain in the urinary bladder.
6. Dilation of the gallbladder.
7. Treatment of diseases with the help of water procedures
8. A morbid dislike (fear) of new subjects (neo...)
9. Pain in a joint.
10. Extreme slowness of heart beats
11. Extremely rapid heart beats.
12. Narrowing of one or more blood vessels.
13. Sectioning of a blood vessel.
14. Examination of the organs of the chest by means of special devices

X. Construct the terms in Latin. Explain their meanings:

1. production of blood

2. surgical incision of gallbladder

3.investigation of intestines (with endoscope)

4. surgical suturing of the kidney

5. surgical removal of a gland

6.narrowing of the bronchi
7. inflammation of the appendix

8. X-ray examination of the lungs

9. softening of the brain

10. pain in the tongue

11 .creation of artificial ostium in the stomach

12.pain in the lubus (lumb...)

13. widening (stretching) of the veins

14. inflammation of the urinary bladder

15. surgical sectioning of the abdominal cavity

17. softening of cartilages

18. downward displacement of the spleen

**SELF-CONTROL EXERCISES**

1. Define the correspondence between the words in the left column and the words in the right column:

|  |  |
| --- | --- |
| 1) ophthalmologia 2) myositis 3) nephroplegia 4) adenitis 5) gastrectomia 6) osteotomia 7) cholecystopexia 8) nephroptosis 9) enteritits10) angioma | a) surgical dissection of a boneb) inflammation of the intestinec) downward displacement of the kidneyd) surgical fixation of gallbladder e) inflammation of a glandf) surgical removal of the stomachg) benign tumor of a blood vesselh) paralysis of a kidneyi) inflammation of a musclej) studying diseases of eye |

2. Define the meaning of the prefix in the term *hypertonia:*

 1) before

 2) after

 3) above the norm

 4) absence of ...

 5) disorder

3. Define the meaning of the prefix in the term *dystrophia:*

 1) disorder

 2) after

 3) above the norm

 4) absence of ...

 5) between

4. Define the meaning of the suffix in the term *gastritis:*

1) diminutive

2) deviation from the norm

3) tumor

4) non-inflammatory disease

5) inflammation

5. Point out the term with the meaning *"tumor*" and translate it into English:

 1. adenoma

 2. nephrosis

 3. osteomalacia

 4. myositis

 5. sarcoidosis

6. Point out the correct meaning of the term *bronchostenosis:*

1) inflammation of the bronchi

2) narrowing of the bronchi

3) extension of the bronchi

4) x-ray study of the bronchi

**CORRECT YOURSELF!**

**The answers**: 1.

1) - j), 6) - a) 2. - 3)

2) - i) 7) - d) 3. - 1)

3) - h) 8) - c) 4. - 5)

4) - e) 9) - b) 5. - 1) tumor of a gland

5) - f) 10) - g) 6. - 2)

**Combining Forms (initial)**

|  |  |
| --- | --- |
| ***Greek combining forms*** | ***English***  |
| adeno-andro-angio-arthro-auto-bradycarcino-cardio-cholecysto-chondro-cysto-cyto-derm-, dermato-entero-erythr-gastro-gloss-glyc-, glyk-haemo-, haematohetero-hepat-histo-homo-, homeo-hydro-kephalo-, cephalo-leuco-, leuk-macro-micro-melan-myo-necro-nephro-neuro-odonto-onco-ophthalmo-osteo-oto-paedio-phlebo-pneumo-poly-psycho-rhino- soma-, somat-spleno-tachy-stomatouro-xantho- | gland mail vessel joint self slow cancer heart gallbladder  cartilage urinary bladder cell skin intestine red stomach tongue sweet, glucose blood other, different from liver texture, tissue alike, the same water head white large small black, dark muscle dead kidney nerve tooth tumor eye bone ear child vein lung a lot of  soul, psychics nose body spleen rapid mouth urine  yellow  |

**COMBINING FORMS (final)**

|  |  |
| --- | --- |
| ***Greek Combining Forms*** | ***English***  |
| -aesthesia-algia-ectasia-ectomia-genes (-genus)-gramma-graphia-iatria-logia-lysis-malacia-megalia-metria-pathia-penia-pexia-philia-phobia-plastica-plegia-pnoe-poesis -ptosis-rhagia-rhaphia-sclerosis-scopia-stenosis-stomia-therapia-thermia-tomia-tonia-trophia | sensitivity pain widening, stretching removal, excision caused by damage in an organ; causing some diseasewritten result of process of registration during investigation curing a group of diseases science, part of science destruction, salvationmorbid softening enlargement measuring suffering, disease deficiency (of blood cells) fixation (surg.) craving for, liking unfounded morbid fear plastic surgery paralysis breathing production, creation downward displacement bleeding suturing (surg.) hardening instrumental investigation narrowing creation of anastomosis method of treatment (non-surg.) heat, warmness surgical incision tonus, blood pressure feeding, blood supply  |